

*See attached
Solicitors Memo
of 6/19/89*

SALT FLATS STUDY;

Goal: The over-all intent of the study is to learn what the life cycle of the BSF is; how the BSF is depleted, and if it is naturally restored, how it is restored. The study should focus on those natural and man-made factors that contribute to depletion and restoration forces that are at work.

Specific Objectives:

1. To determine how salt is lost from the salt crust
 - by underground movement of "brines" containing salt
 - at what rate or in what volumes per unit of time
 - in what directions
 - by what forces or cause agents
 - by overland movement of salt
 - by wind or water movement
 - by any other forces
2. To identify measures, treatments, or practices that could be employed to stop the loss of salt from the salt crust of the BSF.
3. To identify feasible actions or practices that would restore or replace the salt that has been lost/is being lost from the BSF.
4. To determine to what extent existing BLM potash leases are contributing to loss of the salt crust.
5. To determine if potash reserves on the lands under BLM lease contain sufficient reserves to warrant continuation of those leases.
6. To determine if salt is being "drained" from the BSF in combination or separate from magnesium brines onto other leased BLM lands or private lands used for potash production.

Howard/Steve:

After reviewing the Solicitors letter, I have several other items that probably should be included in the USGS study. They are:

1. The USGS should identify any alternative "mining" methods that Reilly could employ that would avoid extracting salt from the BSF. (This may be the same as #2 on my other sheet)
2. What percent of Reilly's production (thence income) is derived from their existing BLM leases.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SALT LAKE DISTRICT OFFICE
2370 South 2300 West
Salt Lake City, Utah 84119

3500 (U-027)
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OCT 16 1989

12 OCT 1989

DIVISION OF
OIL, GAS & MINING

MEMORANDUM

To: USGS, District Chief, Water Resources Division,
1745 West 1700 South, Room 1016, Salt Lake City,
Utah 84104

From: BLM, Salt Lake District Manager

Subject: Bonneville Salt Flats Study

The Salt Lake District, BLM, has received approval for funding of the Salt Flat Study. The study will be conducted as per the Interagency Agreement between the BLM and USGS. Attached is a memorandum which indicates that additional study is needed prior to taking further legal action. In order to insure that the study plan under preparation by the USGS would investigate the aspects of the Bonneville Salt Flats (BSF) most pertinent to the BLM, the following information is provided. In addition to the items listed in the existing preliminary study plan, the following objectives should be added or receive additional emphasis.

Goals and Objectives

The major area of concern to the BLM is salt balance on the BSF. All factors potentially affecting the salt crust must be evaluated. These factors include surface and subsurface parameters. Lines (1979) identified floods of wind driven brine as an effective method for removal of salt from the BSF. An effort should be made to document and quantify this occurrence. Climatological or other data could be evaluated to ascertain if the brine is returning to the salt flats after being driven by winds, the brine could be tagged (radioactive isotopes or other means) to back up qualitative data such as the study of aerial photographs.

Isostatic rebound has been identified as a possible mechanism for displacement of the salt flats. Is there any evidence to support this possibility? The Cadastral Survey could assist as needed. Impacts of racing and other uses should be investigated.

Identify historic trends in salt volume and distribution and contrast these trends with salt volume and locations since desiccation of Lake Bonneville. Lines (1979) evaluated various measures to resolve conflicts on the Salt Flats of which replacement of the salt and reductions in salt loss would appear to be most viable. Please include a feasible analysis which addresses salt transportation, sources, volumes, distribution

methods and cost in the study plan. It is also necessary to evaluate the most effective ways of reducing salt loss. This could include ditch closures or alternative mining areas and methods for reversing hydrologic gradient, and other possibilities the USGS may develop. One method suggested for reversing the hydrologic gradient would be to maintain the water level in a production ditch at a high level.

The study plan should also provide for sampling of Federal leases and adjacent lands in order to determine if potash or other minerals such as magnesium or sodium salts have been produced from unleased lands.

Methods

To be completed by USGS in detail but generally to consist of drilling, sample collection and analysis, pump tests, 3-D modeling, air photo analysis, and climatological data analysis.

Products

Status report by USGS to involved Federal and State agencies every four months summarizing tasks performed.

06/15/90 Interim report - analysis of wind driven brine floods.

10/92 Publication ready report completed.

Funding

The Salt Lake District BLM has received approval for funding of \$105,000 per year for three years. Additional funding may be acquired from user groups. Reilly has been approached to provide access, brine chemistry and flow data, and drilling assistance. The USGS should prepare a project plan which would adequately address all study parameters and identify additional funding needs.

Attachment
As stated

cc: Dianne Nielson



United States Department of the Interior

OFFICE OF THE SOLICITOR

INTERMOUNTAIN REGION
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125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138-1180

June 19, 1989

*Rec'd SLD
10/2/89*

MEMORANDUM

To: David K. Grayson, Assistant Regional Solicitor
FROM: Kerry L. Chlarson, Legal Intern
SUBJECT: Bonneville Salt Flats

There are various questions which need to be addressed before any determination can be made as to any legal remedies in preserving the salt flats.

1. Are there any reasonable alternative extraction methods which would not harm the salt flats?

2. Are there other public lands available of equal mining value which could sustain the current mining activities without harming the salt flats and could they be exchanged for the current leased property?

3. Would all potash mining have to be terminated to save the salt flats?

4. What water rights does the United States have in the area under discussion?

It should also be noted that before any action can be brought to stop the current mining activities a detailed and indepth study would have to be conducted which demonstrated that

the mining activities are in fact destroying the salt flats and that the mining companies are currently mining materials other than those contained in the leased areas.

If the study shows that the mining activities are destroying the salt flats and that only a termination of those activities can preserve them, then there is a possibility that the courts would award an injunction to prevent irreparable harm based on a theory of public nuisance.

An injunction based on a public nuisance theory requires two things. First, a showing of a substantial injury to the general public, and second, a balancing test of the harm caused by the activity and the harm that would result if the injunction was granted. See U.S. v. Reserve Mining Co., 380 F. Supp. 11 (1974). That is why the extent of the mining limitations need to be known. Because of the fact that the government leased the mining companies rights to mine, the court will probably be concerned with the amount of harm that they will incur if they are forced to stop their operations.

There are, however, cases in which the court has granted injunctive relief to a public entity even though it had issued permits for the activity in question. U.S. v. Reserve Mining Co. 380 F. Supp. 11 (1974).

I have not yet located any cases in which the court has revoked a lease or granted injunctive release based on a theory of public nuisance which involved the federal government. I will continue to search for such a case.

I recommended that before further action is taken we obtain answers to these questions and that the required study is performed.

Kerry L. Chlarson

Legal Intern